

BISHOP CREEK HYDROELECTRIC SYSTEM, CONTROL
STATION, OPERATIONS BUILDING No. 1
(BISHOP CREEK HYDROELECTRIC SYSTEM, CONTROL
STATION, OPERATIONS BUILDING NO. 102)
BISHOP CREEK
BISHOP VICINITY
INYO COUNTY
CALIFORNIA

HAER No. CA-145-1-A

HAER
CAL
H-BISHV,
SA-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
NATIONAL PARK SERVICE
WESTERN REGION
DEPARTMENT OF THE INTERIOR
SAN FRANCISCO, CALIFORNIA 94107

HISTORIC AMERICAN ENGINEERING RECORD

HAER
CAL
14-BISH.V,
2A-

BISHOP CREEK HYDROELECTRIC SYSTEM, CONTROL STATION,
OPERATIONS BUILDING NO. 1
(BUILDING NO. 102)

HAER No. CA-145-1-A

Location: Near Bishop Creek in Southeast 1/4 of Section 17, Township 7 South, Range 32 East, M.D.M, Inyo County, California. Eastern Sierra Nevada approximately 2.5 miles southwest of the town of Bishop, California, and 225 air miles due north of Los Angeles.

Date of Construction: 1916

Builder: Unknown

Present Owner: Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, CA 91770

Original Use: Operations Building

Present Use: Residence

Significance: Building 102 Control Station (formerly Operations Building #1, Control Station) was constructed as the first operations building at the control station for the Bishop Creek Hydroelectric System in the eastern Sierra Nevada. The building is significant both for its role in the early history of the Bishop Creek System, and as an example of the Mission Revival style building in a hydroelectric complex. The Bishop Creek System is considered significant for its role: (1) in the expansion of hydroelectric generation technology, (2) in the development of eastern California, and (3) in the development of long-distance power transmission and distribution.

Report Prepared By: Ward Hill
Architectural Historian
BioSystems Analysis, Inc.
303 Potrero Street, Suite 29-203
Santa Cruz, CA 95060

Date: January 19, 1994

BISHOP CREEK HYDROELECTRIC SYSTEM, CONTROL
STATION, OPERATIONS BUILDING NO. 1
(BUILDING NO. 102)
HAER NO. CA-145-1-A
(PAGE 2)

I. DESCRIPTION

Building 102 Control Station was the original operations building at the Control Station for the Bishop Creek Hydroelectric System. The Control Station is where the power from the various generating plants is collected for distribution. Apparently this building originally housed some of the equipment for controlling the distribution of power from the Bishop Creek System, in addition to the operator's office and residence. Operation Building No. 1 at the Control Station is about 500 feet north of Plant No. 5. The Control Station and Plant No. 5 are southwest of Plant No. 6 and northeast of Plant Nos. 2, 3 and 4. The Bishop Creek System is about five miles southwest of the town of Bishop, Inyo County, California. The five power plants in the system, located primarily along the south, middle, and north forks of Bishop Creek, are at varying elevations on the steep eastern slopes of the southern Sierra Nevada Range.

Building 102 Control Station is on a flat site of low bushes and weeds, i.e., without any landscaping or yard. A low, deteriorated stone retaining wall is in front of the building, and one mature tree is to the south. Behind the building are various power lines and distribution equipment. The building is a single-story, rectangular plan (42 × 20 feet) structure characterized by the tall, stepped parapet gables at its front and rear elevations (Photos 145-1-A-1, 145-1-A-2 and 145-1-A-3). The building's distinctive stepped gables, each with a top curvilinear gable, is a typical feature of the Mission Revival style, as is the building's rough textured stucco surface (Photo 145-1-A-4 and 145-1-A-5). Structurally, the building is stud-wall, wood-frame construction on a perimeter concrete foundation. The medium-pitched gable roof is covered with asphalt shingles, and under the roof eaves are exposed rafters. The front entrance porch along the width of the east elevation has a hipped roof (also covered with asphalt shingles) supported by massive corner posts. The segmental arches of the front porch were originally open, but in recent years they have been filled in with diagonal exterior siding and paired, vertical windows. The right half of the front of the porch has been filled in with a solid wood front door flanked by pairs of windows (Photo 145-1-A-6).

The building has 1-over-1, wood-sash double-hung and wooden casement windows. There is an louvered semi-circular vent under the central gable on the front elevation, and circular vent on the rear elevation. The ca.-1960 addition to the north elevation, covered with asbestos shingles, has sliding aluminum frame windows. A concrete stair with a metal handrail leads into a basement area on the south elevation (Photo 145-1-A-7).

The interior of Building 102 Control Station retains much of its original plan. The interior was originally divided so that about 30% was an office/operations area on the west side, while the

BISHOP CREEK HYDROELECTRIC SYSTEM, CONTROL
STATION, OPERATIONS BUILDING NO. 1
(BUILDING NO. 102)
HAER NO. CA-145-1-A
(PAGE 3)

remaining 70% on the east side of the building was a single family residence. The building has been 100% residential since the present control station was built in 1919. The office area, which has its own entrance at the center of the west elevation, is a single space about 20 × 12 feet. The residential part of the building includes a living room, a dining room, a kitchen, two bedrooms and a bathroom. The residence has a compact plan with no halls or corridors joining the rooms which open directly one to another. The doors and windows in these rooms are framed with simple, plain boards. The smooth plaster walls have simple baseboards and no cornice moldings. The residence's original doors (with inset panels) and hardware are intact.

From the enclosed front entrance porch (Photo 145-1-A-8), one enters the living/dining room area (Photo 145-1-A-9). The living areas are arranged along one side, and the two bedrooms and bath on the opposite side of the building. A door on the south side of the living room opens into one of the bedrooms (Photo 145-1-A-10). A bathroom (recently remodeled) joins this bedroom to the second bedroom to the west (Photos 145-1-A-10, 145-1-A-11, and 145-1-A-12). The second bedroom has an unusually large window consisting of two casements flanked by narrow double-hung windows (Photo 145-1-A-14). A door opens from the second bedroom into the dining room (Photo 145-1-A-13). One enters the recently remodeled kitchen from the dining room (Photo 145-1-A-15). Another door from the second bedroom opens into the office/operations area at the back of the building. The cabinets in the office area are a recent addition (Photo 145-1-A-16).

II. HISTORICAL CONTEXT

The Bishop Creek Hydroelectric System is significant in the history of hydroelectric power generation technology, the development of eastern California, and the development of long-distance power transmission and distribution. The Bishop Creek system is an early example of a high-head, impulse water wheel, high-voltage electric generation system. The system exhibits a high level of innovative planning, maximizing the production of energy by combining use of the steep slope of the eastern Sierra Nevada with specialized generation technology.

The first hydroelectric power generation along Bishop Creek was a small plant operated by the Bishop Light and Power Company. The plant, a Stanley polyphase generator (150 horsepower) driven by a 48-inch Pelton wheel, generated power for local use. The impetus for the development of the Bishop Creek system was the discovery of economic minerals in the Tonopah and Goldfield areas of Nevada. The local power companies in these areas generated

BISHOP CREEK HYDROELECTRIC SYSTEM, CONTROL
STATION, OPERATIONS BUILDING NO. 1
(BUILDING NO. 102)
HAER NO. CA-145-1-A
(PAGE 4)

electricity by burning fuels, an expensive and unreliable source of power for an industrial operation like mining.

Loren B. Curtis and Charles M. Hobbs arrived in the Tonopah and Goldfield areas in 1904 because of their interest in mining. Curtis and Hobbs recognized that the economic potential of mining in this area could not be tapped unless a reliable and inexpensive power source could be developed. Curtis, an engineer, decided that Bishop Creek in the eastern Sierra would be the best location for the production of hydroelectric power for the nearby Nevada mining areas. Hobbs, a banker and financier, obtained financial backing for the project, and then incorporated with his partner as the Nevada Power, Mining and Milling Company in December 24, 1904. Construction commenced in January 1905 on the first generating plant (Power Plant No. 4); nine months later, in September 1905, electricity was delivered to the Goldfield substation. Since Nevada Power, Mining and Milling had secured contracts for power delivery to the mining companies in Goldfield and Tonopah, there was a ready market for Bishop Creek electricity. The inexpensive power from Bishop Creek made it possible to mine economically in these areas, producing a new mining boom and a period of posterity in Nevada (Elliott 1984:210-215).

On January 5, 1907, the Nevada-California Power Company was incorporated as the successor to Nevada Power, Mining and Milling Company. In 1907, Nevada-California Power expanded Power Plant No. 4, and they purchased the capital stock of Hillside Water Company, thus permitting the construction of additional plants along Bishop Creek. In 1908, a fifth operating unit was installed at Power Plant No. 4 and construction was completed on Power Plant No. 2. Power Plant No. 5 was constructed in 1909, and South Lake was enlarged. After this expansion, the Bishop Creek System produced significantly more power than was needed by its current market, still primarily mining operations in Nevada.

In an attempt to expand the market for Bishop Creek power, the directors of Nevada-California Power Company incorporated the Southern Sierra Power Company as a subsidiary in 1911 with its main purpose being to service the power needs of southeast California.¹ The total output of the Bishop Creek plants was 12,500 kW in 1911 when construction began on a transmission line to San Bernardino where a steam plant was built. Power Plant No. 3 was

¹The creation of Southern Sierra Power Company consolidated several associated companies, including the Nevada-California Power Company, the Bishop Light and Power Company, the Corona Gas and Electric Company, the Lytle Creek Power Company and the Hillside Water Company.

BISHOP CREEK HYDROELECTRIC SYSTEM, CONTROL
STATION, OPERATIONS BUILDING NO. 1
(BUILDING NO. 102)
HAER NO. CA-145-1-A
(PAGE 5)

completed in 1912, adding 6,000 kW to the system. During 1912 and 1913, the southern California system was expanded substantially, with the system's capacity increasing to 24,350 kW, when Power Plant No. 6 was completed in 1913. The Bishop Creek System was essentially complete with the five plants existing today in operation by the end of 1913.

Southern Sierra Power Company, which continued to expand by buying smaller power companies, grew to play a significant role in the development of southeastern California, particularly the Imperial Valley. In 1914, the longest power transmission line in the world (at the time) was completed, delivering power from Bishop Creek to the Imperial Valley. As a result of the electrical power now available, the population of the Imperial Valley grew from only 50 to over 65,000 in the next 20 years.

Nevada-California Power Company and Southern Sierra Power developed and operated the Bishop Creek plants as two separate, but associated, power companies. As two branches of a larger power corporation, they initially produced power at slightly different voltages, which made it difficult to tie the two systems together.

Plant Nos. 2, 3 and 4 were operated by Nevada-California Power Company and they serviced the Nevada mining districts; Southern Sierras Power Company operated Plant Nos. 5 and 6 for delivering power to southern California. Building 102 Control Station was built in 1916 as part of the Control Station for the Southern Sierras Power Company Plants Nos. 5 and 6. The Control Station regulated the distribution from this part of the system. Building 102 Control Station was designed in the Mission Revival style, a California regional style inspired by the state's old missions. As a style derived from California's Hispanic past, the Mission Revival was a popular counterpart in the early 20th century in California to the Colonial Revival on the East Coast. The Mission and Colonial Revival styles were both architectural idioms that borrowed imagery from historic buildings unique to their respective regions. In 1918, a new, larger Control Station, also in the Mission Revival style, was built near Plant No. 5 so the two systems developed at Bishop Creek could be permanently interconnected. After the new Control Station was built, Building 102 was used solely as a residence.

During the 1920s, the power-generating system was "fine-tuned" to extract as much power as possible from the existing plants. Much of the company's resources at this time were used to market energy at the far reaches of the distribution network and to purchase other power companies. During the 1930s, there was only limited development in Bishop Creek because of the worldwide depression. Increased competition from rival companies producing cheaper energy on the Colorado River forced the Bishop Creek company during the 1930s to withdraw

BISHOP CREEK HYDROELECTRIC SYSTEM, CONTROL
STATION, OPERATIONS BUILDING NO. 1
(BUILDING NO. 102)
HAER NO. CA-145-1-A
(PAGE 6)

from the Imperial and Coachella valley markets. The Nevada-California Electric Corporation, formed as a holding company in 1914 for the companies associated with Southern Sierra Power Company, became an operating company in 1936 when the subsidiary companies were dissolved and the operating properties transferred to the parent company. In 1941, the company changed its name to California Electric Power Company (later known as Calelectric).

The properties of Calelectric were acquired by Southern California Edison Company (SCE) in 1964 through a merger consolidation. SCE is the present operator of the Bishop Creek plants. Since 1964, SCE's consolidation of operations and automation of the power plant equipment has resulted in the elimination of many of the on-site employees. During the 1970s, all the housing units at Plants Nos. 2, 3, and 5 were demolished, leaving structures only at Plant Nos. 4, 6 and the Control Station (near Plant No. 5).

III. SOURCES

Coleman, Charles M.

1952 P. G. and E. of California: The Centennial Story of Pacific Gas and Electric Company, 1852-1952. McGraw-Hill Book Company, Inc., New York.

Elliott, Russell R.

1984 History of Nevada. University of Nebraska Press, Lincoln.

Intermountain Research

1986 An Architectural and Historical Evaluation of Structures Associated with the Bishop Creek Hydroelectric Power System, Inyo County, California, December, 1986. Unpublished report prepared for Southern California Edison.

Theodoratus Cultural Research, Inc.

1988 Evaluation of the Historic Resources of the Bishop Creek Hydroelectric System. July, 1988. Unpublished report prepared for Southern California Edison.

Weitze, Karen J.

1984 California's Mission Revival. Hennessey and Ingalls, Inc., Los Angeles, California.

BISHOP CREEK HYDROELECTRIC SYSTEM, CONTROL
STATION, OPERATIONS BUILDING NO. 1
(BUILDING NO. 102)
HAER NO. CA-145-1-A
(PAGE 7)

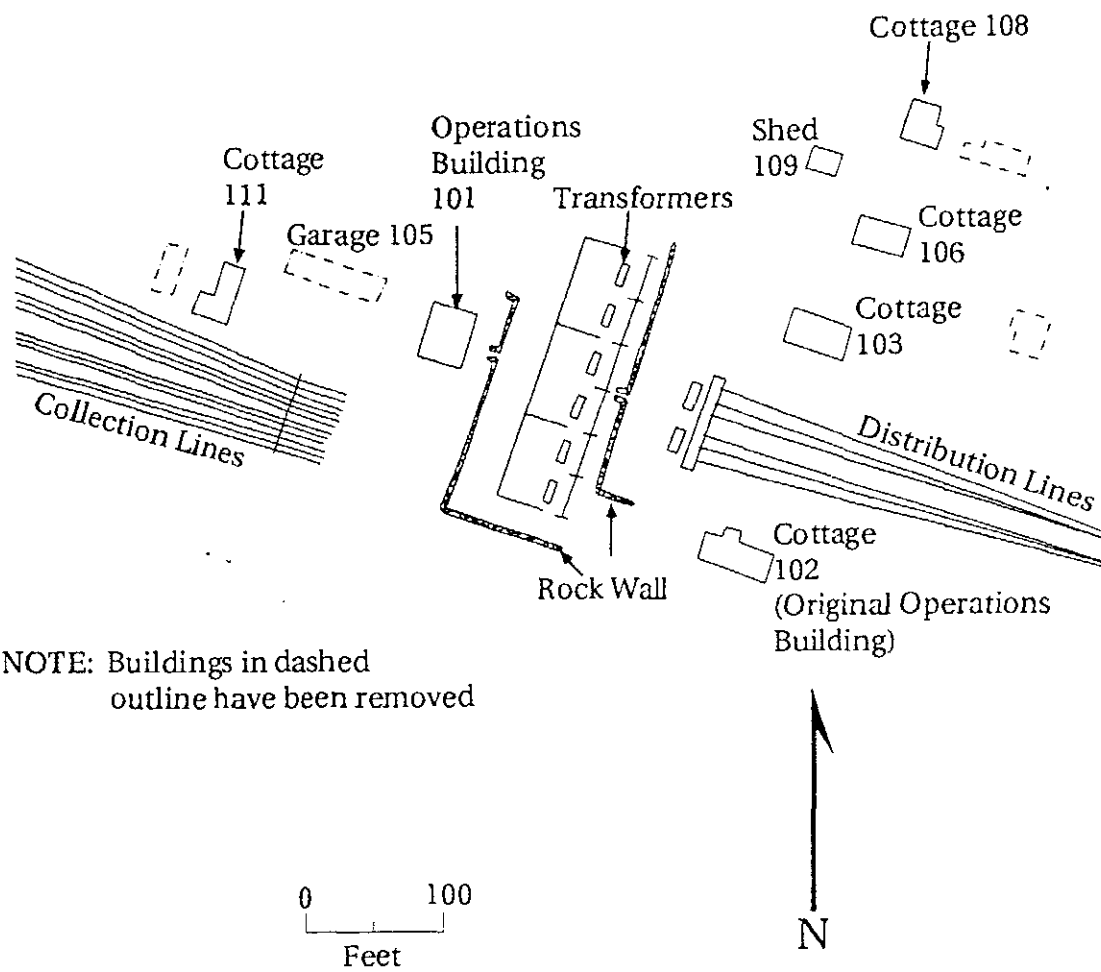
Whiffen, Marcus

1969 American Architecture Since 1780. MIT Press, Cambridge, Massachusetts.

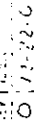
IV. PROJECT INFORMATION

This Historic American Engineering Record documentation of Building 102 Control Station, a structure at the Control Station of the Bishop Creek Hydroelectric System, was undertaken because the building represents excess housing. SCE is continuing to automate the Bishop Creek power plants. The automation of the power plants has made it unnecessary to have on-site crews, thus, residential units like this house have become obsolete.

BISHOP CREEK HYDROELECTRIC SYSTEM, CONTROL
STATION, OPERATIONS BUILDING NO. 1
(BUILDING NO. 102)
HAER NO. CA-145-1-A
(PAGE 8)



(PAGE 9)



LOCATION CONTROL STATION
COTTAGE

FRONT ELEVATION
SOUTHERN CALIFORNIA EDISON CO. (P)

215793-

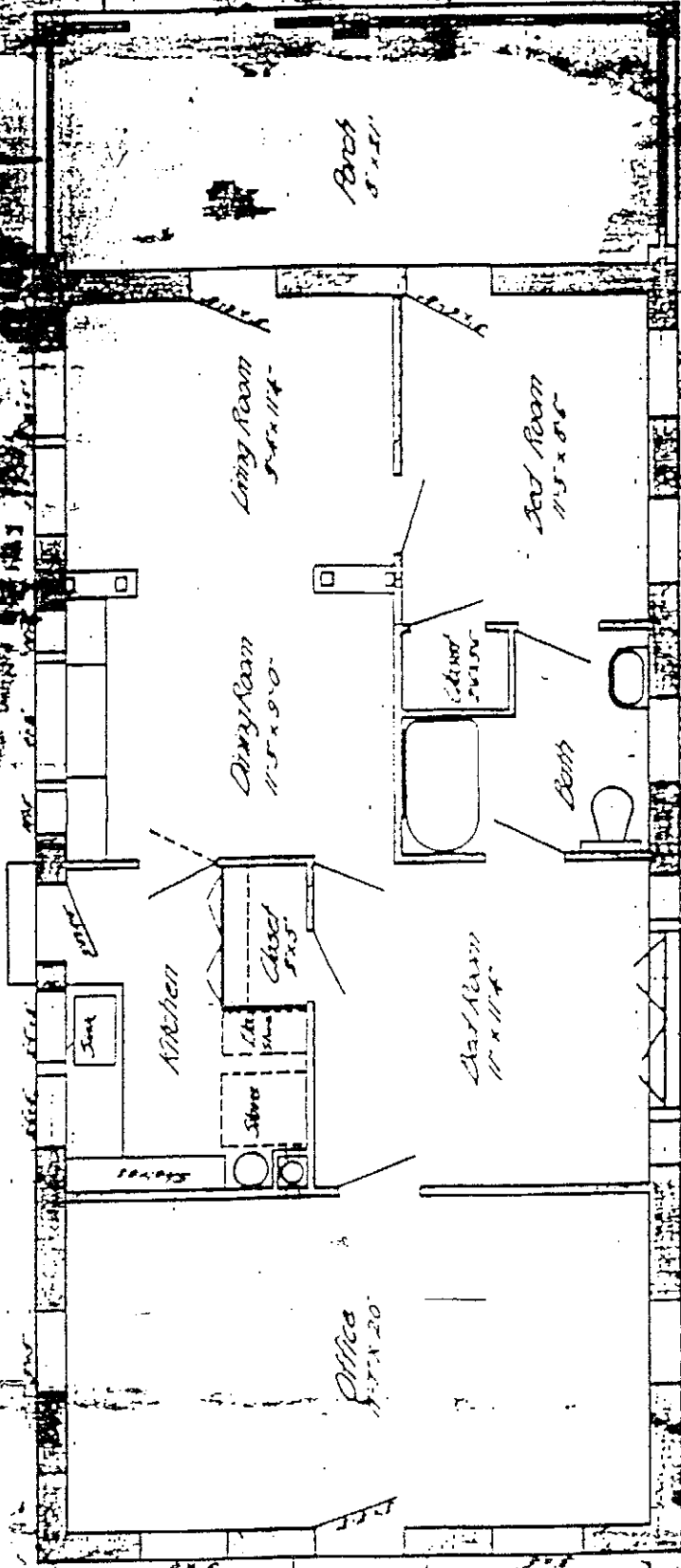
[illegible]

BISHOP CREEK HYDROELECTRIC SYSTEM, CONTROL
STATION, OPERATIONS BUILDING NO. 1

(BUILDING NO. 102)

HAER NO. CA-145-1-A

(PAGE 10)



MICRO
IDENTIC
BY
12-22-64

No. 1 Cottage at Control Station
42'-0" x 42'-0"

CROSS REFERENCES		DESIGNED		TRACED		COMPARED		DATE		APPROVED		O.K.		CHECKED		DRAWN		J.O.N.	
LOCATION CONTROL STATION																			
NO. 1 COTTAGE																			
SOUTHERN CALIFORNIA EDISON COMPANY																			
215791-																			